### DOCUMENT RESUME

ED 482 780

FL 027 951

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TITLE

When Eastern Oriental Meets Western Occidental Language System: Crossing the English Vocabulary Threshold versus

Breaking the Kanji Barrier.

PUB DATE

2001-12-00

NOTE

22p.

PUB TYPE .

Journal Articles (080) -- Reports - Research (143)

JOURNAL CIT

Bulletin of Seinan Jogakuin Junior College; n48 p19-38 Dec

2001

EDRS PRICE

EDRS Price MF01/PC01 Plus Postage.

DESCRIPTORS

Chinese; \*English (Second Language); Foreign Countries; Higher Education; \*Japanese; \*Orthographic Symbols; \*Reading Instruction; Reading Skills; Second Language Instruction; Second Language Learning; Teaching Methods; \*Vocabulary

Development; \*Written Language

**IDENTIFIERS** 

\*Asian Languages; Japan; \*Kanji Script

#### ABSTRACT

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西南女学院短期大学研究紀要第48号抜刷 2001.12



### When Eastern Oriental Meets Western Occidental Language System: Crossing the English Vocabulary Threshold versus Breaking the Kanji Barrier

### John Paul Loucky

#### Abstract

What lessons can be learned from relevant research in vocabulary- and language-learning strategy training as well as from comparative studies of those learning Oriental languages, which could have helpful applications to language learners from Kanji-background countries? Could both mnemonic and Semantic Field Keyword Approaches help them by building upon their well-known strengths of rote-memorization, especially of visual images necessary for mastery in reading Kanji-based languages? These questions are examined in this study, which compares methods of teaching a Kanji-based language like Japanese to non-natives, with more effective methods for teaching students from Kanji-based countries how to develop better EFL vocabulary and reading skills. Since this is written from a Japanese perspective, the term "Kanji" will be used in a generic sense to mean Chinese characters. When not capitalized, "Kanji" will refer to Japanese specific use of these characters.

### Introduction:

Westerners have often become stymied in trying to learn the complex reading and writing systems of Kanji-based Oriental languages. One common anonymous joke has it that becoming fluent in Japanese takes at least three lives, including the "strength of Samson, the wisdom of Solomon, and the longevity of Methuselah." By way of comparison, when Chinese radicals were first defined in 1713, a 42 volume series of dictionaries listed 42,000 Chinese compounds (Kangxi zidian). According to Noguchi, (2001, p. 16), in 1962 "Nelson managed to compile the most comprehensive list of characters and compound words available to non-Japanese at the time; approximately 5,500 characters and 70,000 compounds." Since Asians who use Kanji spend so much time learning their complex grapho-phonemic systems, can't Westerners learn something from how these difficult reading and writing systems are taught, which could help to improve L2 vocabulary instruction in English and other languages as well? Evidence seems to be in the affirmative.

Just as it is important for students of language systems using Chinese characters to have rapid-access indexing systems available at their fingertips, so too English language learners from these Kanji-based countries especially need to have more high-speed, user-friendly, multiple-function computerized bilingual dictionaries (CBDs) available to help them access and archive new TL word meanings, examples, pronunciation, and as much information as possible about parts of speech, frequency of use, common collocations, etc.

Good readers of cognate languages seem to often invoke prior knowledge or rely on related word forms to decipher new word meanings in their target language. However students learning non-cognate or unrelated languages do not have the benefit of using this strategy. There seem to be special challenges faced by such students when attempting to learn non-related languages, especially in areas of vocabulary acquisition, as well as in processing of completely foreign rhetorical styles and unrelated syntactical structure.

Ruxton (1994, p. 1) noted that "The mastery of Kanji is the greatest difficulty faced by learners of Japanese whose first language is not based on such a complex writing system," distinguishing between learning to 1) copy or reproduce, 2) recognize, and 3) write from memory. Clearly, the ability to recognize kanji characters in reading is a receptive



skill, whereas ability to write any character from memory requires recall or productive skills. This distinction between learning more passive/receptive versus active/productive vocabulary skills is discussed and defined in detail in the author's (2001, forthcoming) article, entitled "Defining and testing active versus passive vocabulary." In brief, it presented the following Vocabulary Knowledge Scale (henceforth VKS), with evidence for its reliability for assessing the vocabulary knowledge of students at various levels of language proficiency as demonstrated at several Japanese colleges.

In "Defining and testing 'Active versus Passive Vocabulary' for more effective language teaching and learning," this writer designed and tested a Vocabulary Knowledge Scale for Japanese first year EFL college students at three different schools and proficiency levels. Several studies done in Japan recently accentuate the need for more accurate measurement of students' English vocabulary and comprehension levels. Especially needed is a Vocabulary Knowledge Scale that would be easy for both students and teachers to use and understand.

In order to have a tool to better assess several key variables in English vocabulary and language development among Japanese college students this VKS tool was developed. The pilot study was based on asking students to assess their knowledge of the first 200 word families from the well-established ICU EAP Recommended Vocabulary List (See Mizoguchi, et al., 1992). This research seeks to better define and point the way to a more positive and intentional system of vocabulary learning by suggesting various instructional applications, which could be used to help improve and revamp this key area of English Education. Baseline English reading and vocabulary levels were first obtained at six colleges in Kyushu by testing thousands of students over the past ten years (For an example, see 16 samples in Author's dissertation, 1996, pp. 233-299 ). Such recent studies have begun to compare the use of objective vocabulary tests with more subjective and personalized assessment of vocabulary knowledge by the use of either a) State Rating Tasks (or SRTs), or b) Vocabulary Knowledge Scales (henceforth VKS) for accessing either receptive or productive vocabulary.

This VKS tool's reliability for three different language proficiency levels at three colleges with different majors was also established. These three experiments, combined with Waring's (2000) insights and suggestions for using "Vocabulary Knowledge State Rating Tasks" seem to show that some combination of these two types of data collection tools may help us to gather more reliable and principled selfreports about English vocabulary knowledge from Japanese students. Refinement of these assessment tools may in turn help to provide us with much clearer views into the developmental patterns underlying both their receptive Understanding and productive Use vocabularies, along with better insights into cognitive processing skills and strategies being used by Japanese learners of English. Finally, the bilingual nature of this recently developed VKS assessment tool can also offer us further insights as to the processes of inter-language transfer, especially in this most crucial area of lexical development. The better these processes can be delineated and understood, the more language teachers can improve their instruction. In this way language learners can be better assisted with instruction about essential vocabulary processing steps, skills and strategies, which are shown to be vital for developing fluency in a second or foreign language.

The specific aim of this current study was to compare effective methods of learning Kanji, looking for possible pedagogical bridges to help build a more workable approach to L2 lexical development for English language learners in Kanji-based countries, which addresses the assessment and development of both receptive and productive vocabularies.

### Background of Kanji Study in Japan

Since the 2<sup>nd</sup> Century AD, when the first Chinese dictionary was compiled, Chinese Kanji began to be organized into six categories, based either on character composition or usage (Henshall, 1988, pp. xv-xix). These traditional categories can help enlighten the Occidental English teacher working with Oriental students as to the nature of Kanji. This is quite important to understand, because Kanji is after all their conceptual language, which basically determines how



people from such language backgrounds tend to think, express themselves, and how they begin to process both listening input and also reading texts. These six categories of Kanji are as follows.

- 1) Pictographs 象形 (Shoukei Moji) or characters
- 2) Signs or Symbols —指事 (Shiji Moji) or characters
- 3) Ideographs—会意 (Kaii Moji) or characters
- 4) Phonetic-Ideographs or Semasio-Phonetic —形声 (Keisei Moji) or characters (These comprise the largest category, with 85% of all characters. It combines a general semantic element with a more specific phonetic element.)
- 5) Characters with borrowed meaning or pronunciation一転注 (Tenchuu Moji) or characters
- 6) Phonetically borrowed characters 仮借(Kasha or Kashaku Moji-- These are characters borrowed for phonetic sounds to make a sort of temporary kanji alphabet.
- 7) A seventh category is added by some scholars, called Kokuji (国字), or "National Characters," for those dozen or so very few characters originally made in Japan.

Ruxton (1994) correctly assessed weaknesses and strengths of various approaches to the learning of the Japanese Kanji system in his article entitled "Opening the 'Kanji Curtain': a survey of learning materials." Those instructional approaches and texts which he describes may be characterized as having strengths or weaknesses in the three essential areas of all Kanji learning, which are common denominators whether used in reading Japanese, Korean or Chinese. These three essential elements of any kanji characters are: 1) how to write it, or its stroke order and number; 2) its core meanings; and 3) its possible readings. Japanese kanji may have as many as up to twenty different readings, but almost all have at least two, an original Chinese (or onyomi) pronunciation and a native Japanese reading (or kunyomi). Ruxton (1994, p. 3) points out that good Kanji texts include instruction on each of these areas, and that Kanji learning would be incomplete if any one of these elements is missing, just like a stool missing one of its three essential legs. In order to progress beyond mere copying or reproduction of kanji characters, learning " typical compounds in which the character is used . . . are essential if the learner is to progress to the next major stage of learning . . . reading the character in context."

The importance of learning new vocabulary in context has been firmly established by much research and common observation. While context often helps and influences one's comprehension of texts, encouraging learners to merely guess at the meaning of unfamiliar words is often a slow and unworkable Context may reveal meaning far less frequently than supposed, as Dieghton (1959), and Laufer (1997) have pointed out. While it is naturally easier to determine the meaning of many words when they are presented in context rather than in isolation, context alone seems to have "little effect on automaticity of word recognition," as Alderson (2000, p. 70-71) has pointed out. He also shows how the level of a text's difficulty or readability is a combination of two factors, syntactical complexity and lexical density or load, which are used in computing reading ease or readability formulae. Carnine, et al. (1984) investigated how different kinds of context may have different effects on decoding meaning, depending on how explicit clues were. They found that "Deriving meaning from context is easier when the contextual information is closer to the unknown word, and when it is in synonym form rather than in inference form" (Alderson, 2000, p. 70).

Helping foreign language learners whose L1 is an Oriental, Kanji-based system by building on its strengths, and using familiar visual or auditory imaging and similar mnemonic techniques to enhance retention of L1 target language vocabulary has not been effectively tried or researched in much detail at all. It is clear, however, that they possess much essential background cultural and Kanji knowledge, which are necessary for learning each other's language systems. Thus, most Oriental learners can learn one another's languages in a matter of just two to three years. Westerners often take five to ten years, or even a lifetime to achieve similar levels of literacy in Oriental languages.



## Comparing Cognate and Non-Cognate Languages: Can Eastern and Western Methods Meet?

Perhaps not enough thought has gone into the differences involved when foreign language learners are trying to process new terms, as some language learners will use cognates and translation more than others, depending on the proximity of the language scripts, etymological backgrounds, and so on. One can compare for example the "Bilingual reading strategies: Opportunities and obstacles Garcia, & Pearson, 1996)" of bilingual Latina/o students who are successful English readers, with those who are either monolingual learners or learners whose native language offers no common background script or morphology, such as Orientals trying to learn English. Rather than taking cognate L1 and L2 languages as a model for SLA of contrastive linguistic systems, we should look at studies of native English readers seeking to learn Oriental languages, (such as Shu, Anderson, & Zhang, 1995; Shu & Anderson, 1997) to compare how they fare when facing the reverse challenge.

When assessing bilingual reading strategies of Latino/a students who are successful English readers, Jimenez, Garcia and Pearson (1996) discovered that they used four successful strategies. First, successful Latina/o readers could actively transfer information across languages. Secondly, they could translate from one language to another, although more often from L1 to L2. Thirdly, they could openly access cognate vocabulary as they read, especially in L2. Fourthly, when they met unknown target language vocabulary, these successful Latina/o readers could combine and draw from "an array of strategic processes to determine the meanings of these words" (p. 91).

Specifically because these more proficient readers "rarely encountered unknown vocabulary, and because they could access well-developed networks of relevant prior knowledge, they were able to devote substantial cognitive resources to the act of comprehension. . . data suggest that Latina/o students who are successful English readers possess a qualitatively unique fund of strategic reading knowledge" (Jimenez, et al., 1996, p. 91). Since Latina/o students clearly

benefited from instructional environments that promote and encourage access to their L1 Spanish language strengths, it is only reasonable to assume that Japanese students would also benefit from access to their Japanese language strengths, which the proper use of bilingualized dictionaries would encourage. Few Japanese students seem to be actively taught and encouraged to use Computerized Bilingual Dictionaries (henceforth CBDs) of any kind, however. In a nation with plenty of money for computers and instructional technology not using their vast potential to ease students' vocabulary learning burdens, in both L1 and L2, is a great loss of national resources, which begs to be addressed and changed immediately.

## Existence of a Common 'Threshold Level' of Essential Kanji and English Vocabulary

It is well known that less proficient FL/SL readers possess less vocabulary knowledge, or usually fall below what has become known as the minimum 'threshold' necessary for independent reading. Laufer (1997, p. 23) defined this threshold at about 3,000 word families, also known as headwords, or about 5,000 distinct vocabulary items. Not only do low proficiency readers possess fewer vocabulary resources in their verbal databank, they also possess less cognitive processing skills and strategies required for more fluent reading. Less successful Latina/o readers, for example, were often unable to construct plausible interpretations of L2 text for two reasons. First, there were large amounts of unidentifiable vocabulary. Secondly, they knew and used less comprehension strategies, and were thus less successful in "resolving comprehension difficulties in either language" (Jimenez, et al., 1996, p. 91). These weaknesses of less proficient readers become even greater barriers which inhibit the smooth processing of L2 texts or listening input when languages being learned are completely unrelated in any grammo-phonemic way. Thus it becomes even more important in such instructional settings to try to isolate, analyze the vocabulary and comprehension processing strategies which are needed by these students in order to develop more workable instructional interventions for such EFL students.



Does one find a similar "Minimal Threshold Level" essential for reading of Oriental languages? Obviously mastery of Pinyin, or simplified Chinese script, is necessary for reading Chinese, just as mastery of Hangul or Korean syllabary symbols are essential for reading or shopping in Korea. Likewise, Japan's Ministry of Education officially recognized 1,006 Kyouiku or Education Kanji characters as basic essentials for all elementary students to learn since 1989. Most Kanji texts indicate that about 2,000 characters are the basic minimum needed for even moderately fluent reading of Japanese texts. Three examples may be given. First would be Henshall's Guide to Remembering Japanese Characters (1988) which covers 1,945 of them. Another would be Kikuokas (1970) excellent guide to Japanese Newspaper Compounds, which covers the 1,000 most important character compounds in their order of frequency of appearance. A third example would be Crowley's (1990) The Kanji Way to Japanese Language Power, which is a systematic approach to Japanese language fluency based on scientific studies and use of the 500 most common Chinese characters used in Japanese, given along with both phrase and sentence usage. It is the most practical approach encountered by this author in his study, since it has only Japanese, but gives Romaji readings in the back so a learner can easily confirm them. Gakken's New Dictionary of Kanji Usage (1982, frontispiece), typical of many designed by foreign students of Japanese, contains 2,000 kanji entries, noting that these are "all that are needed for reading modern Japanese, and over 98% of the kanji encountered in everyday Japanese life."

## Importance of Automaticity of Lexical Access by Attained by Mastering Decoding Skills

Many studies across languages have shown the important role that gaining higher degrees of vocabulary knowledge, known more technically as 'automaticity of lexical access,' plays as a necessary prerequisite of reading comprehension. As readers become more skilled and mature they gain better efficiency and automaticity of word recognition skills.

How do these findings compare between learners of English and other Western languages, as opposed to Kanji-based languages?

Kuhara-Kojima, Hatano, Saito, and Haebara (1996, p. 158) investigated the "Vocalization latencies of skilled and less skilled comprehenders for words written in hiragana and kanji," two out of three of the writing systems used by Japanese. While hiragana and katakana are syllabaries made up of fifty sound-symbols, kanji characters are known as morphograms, being a combination of meaning and a sound-symbol. Their findings were consistent with those of Perfetti's (1985) "verbal efficiency theory," which learner's potential to vocalize printed words is a good representation of their degree of automaticity of word recognition. In their words:

Vocalization latencies are operationally defined as the elapsed time from the presentation of a word to the subject's initial vocalization. [Assuming that] . . . some speech process accompanies lexical access. . . a phonological code is necessarily activated with the lexical access (Perfetti, Zhang, & Berent, 1992).

This means that when understanding of target language vocabulary is achieved within a learner's mental lexicon, it triggers some sound-symbol-meaning association, resulting in vocalization. In Kanji systems, however, there are several possible pronunciations for various kanji. Thus, some Chinese or Korean students learning Japanese may be able to read Japanese characters with an understanding of their meaning, but not necessarily know their correct pronunciations in L2.

Numerous factors in the development of reading skills, including developing more automatic word recognition skills, have been analyzed, but not enough studies of these factors have been done in EFL settings in general, and among lower proficiency level learners in particular. This researcher has developed a dynamic "Vocabulary Knowledge Scale" and cyclical "Taxonomy of Vocabulary Learning Strategies" to help isolate and analyze each step of development in this growth process (see Author, 2001). Better means of testing important word identification skills and development need to be found, such as these Vocabulary Knowledge and State Rating Scales. The impor-



tance of learning high frequency vocabulary first is a clearly understood principle in learning any language, since these words have a higher percentage of text coverage.

Mori and Nagy (1999, p. 80) point out that "In written Japanese, a large proportion of the vocabulary that readers of Japanese encounter is in the form of kanji compounds, each word consisting of two or more kanji characters. . . because native words are often presented in kanji or in the combination of kanji and one of the syllabaries, the total proportion of kanji words would be much higher than 65%. . . (the 500 high-frequency characters would cover 80-85% of kanji used in printed materials; the 1,000 high-frequency characters 90-95%), . . . after learning the basic kanji characters, learners of Japanese must learn, or at least be able to infer, the meanings of many novel kanji compounds independently.

In light of their vital importance, the strengths of a work like Crowley's (1990) The Kanji Way for learning such high-frequency kanji vocabulary should be mentioned. Its page numbers correspond to Japan's National Language Research Institute's ranking of characters in terms of their level of frequency, the order in which vocabulary should be learned to be of greatest benefit to the learner. This gives him or her a better idea of the relative importance of each character or word studied, and also helps to break down the vast system of written systems in Kanji. Perhaps the clearest statement of a minimal Japanese Kanji threshold vocabulary would be Crowley's (1990). He stresses that one should learn characters in the order of their frequency of occurrence in modern Japanese literature. His rationale for learning vocabulary by frequency is:

"Proof of this is the fact that one-fourth of all the characters used in modern Japanese occur in three-fourths of all the most frequently occurring words. This means that by concentrating on learning approximately 500 select characters [as a "Minimum Threshold"], the student is assured of being able to read 75% of all the high frequency words he will encounter in modern literature. . . they constitute a good beachhead to establish." (p. xviii)

Since such a high percentage of textual coverage

could be made possible with mastery of these 2,000 characters, many of which are based on an almost infinite possibility of combinations of primitive elements and/or radicals, it gives both hope and a clear learning goal to foreigners attempting to become fluent readers of Japanese. In *Assessing Reading*, Alderson (2000) notes:

Measures of readers' vocabulary knowledge routinely correlate highly with measures of reading comprehension, and are often, indeed, the single best predictor of [success in] text comprehension. . . Research by Laufer (1989) and Liu and Nation (1985) shows that readers need to know 95% of the words in text to gain adequate comprehension and to be able to guess unknown words from context [with any degree of accuracy]. Hirsh and Nation (1992) estimate that in order to be familiar with 97% of the words in text, a reader needs a vocabulary of roughly 5,000 words. Readers familiar with only the 2,000 most frequent words of English, as compiled by West (1953) in his General Service List (GSL) will only understand roughly 90% of the words in text.

Likewise, Nation and Newton (1997, p. 239) inform us that knowing the 2,000 most high-frequent English vocabulary words gives a text coverage of about 87%. Adding 800 academic words can raise that to 95% of text coverage, and learning 2,000 more technical vocabulary could enable one to know 97% of all the words commonly met in English reading texts. These relationships can be understood more quickly perhaps if they are illustrated graphically on a chart comparing "Vocabulary Word Knowledge" with "Percent of Text Coverage" or comprehension such knowledge could result in.

These figures can be very helpful in predicting comprehension levels, since vocabulary and comprehension are so closely related. In Laufer's (1997, p. 24) own words:

These figures are correct if the progress in reading vis-à-vis vocabulary size is always linear. It is possible, however, that when the learner reaches a certain vocabulary level, progress in the reading scores will decrease and finally level off. Even if the results are not conclusive for all



Table I: Correlating Vocabulary, Comprehension and Text Coverage Levels:

READING LEVEL	WORD REC. %	COMPREHENSION vs. Text Coverage %	Headwords Needed #Lexical Items
Frustration Level: >1/20 running words are Unknown	Simple Texts: 87- 90% common: EAP/Technical Text	50% or Less Comp. 85% Text Coverage- 95% Text Coverage	1-2,000 or Less 2,000 Hi-Frequency +800 Academic Wd
Instructional (Laufer "Threshold Level")	95%; Less than 5% Unknown Vocab.	56% Comprehension 97% Text Coverage	3,000 Families; 5,000 Lexical Items
Independent Level	Know 99% or Better of texts words to be at appropriate level. Predicted Range of Comprehension for any text by Vocab=	6,400 word Vocab= 8,000 word Vocab= 9,600 word Vocab= 10,600 Vocabulary= 11,600 Vocabulary= 12,600 Vocabulary=	63% Comp Level 70% Comp Level 77% Comp Level 84% Comp Level 91% Comp Level 98% Comp Level
JAPANESE KANJI	Simple Texts	75% Text Coverage	500 Common Kanji
	Common Texts	80-85% Coverage	1006 Kyouiku Kanji
Difficulty Levels:	Technical Texts	98% Text Coverage	2000 Major Kanji

vocabulary levels, they provide, nevertheless, a general idea of how reading progresses above the threshold level of 3,000 word families and what vocabulary size should be aimed at for different reading levels. If the optimal reading score is considered to be, for example, 70%, then the vocabulary size to aim for will be 5,000 word families [8,000 lexical items]....

## Dynamic Vocabulary Knowledge Scale Design: Modified by State Rating Task Insights

Since it is so crucial to compare and assess both

language learners' "Receptive Recognition or Understanding Vocabulary" as well as their "Active Production or Use Vocabulary," the author designed an easily assessed Vocabulary Knowledge Scale (VKS) (See Table II), attempting to help meet the real needs of Japanese students and teachers. It has a five-item scale, ranging from A-E, so that *Excel*-generated forms can be used for rapid test construction. These are its categories: A. I know the Japanese meaning of this word; B. I know the English meaning; C. I can use this word in a sentence; D. I've heard the word, but am not sure of its meaning; E. I have no idea what this word means; unknown.

At first this test was given receptively, as just a

Table II: Vocabulary Knowledge Scale for Japanese Students (Co. Author, 2000).

Know L1 Japanese Definition A (%)	Know L2 English Definition B (%)	Can Use Word in a Sentence C (%) 4 Clear or 5 Perfect	Have Heard, but Not Sure D ( %)	Unknown Word; No Idea at all E (%) No Points	Word Token or Family	Modified ICU # EAP List
					abandon abbreviate abide ability abnormal abolish abroad absence absolute absorb	1 2 3 4 5 6 7 8 9

Date: / / Circle:

T1/T2 \_\_ Receptive % or \_\_ Productive Assessment

(For **Productive** Assessment, for words believed to be known, students write in definitions they think they know under columns A & B, writing sentences for C on the back. Perfect score=100. Compare with Receptive %.)



self-reporting checklist to show levels of word knowledge concerning the first 200 word families on the International Christian University's "Recommended AEC Vocabulary List", constructed by Mizoguchi, et al., (1992). Of the five categories just listed, the first three may also be given again productively in an active mode. In the later case, students would be asked to write out definitions first in L1 and then in L2. Thirdly they would try to use the word in a sentence. This second assessment could be given either in written form or by means of an informal oral interview. Students at three colleges in Kyushu were asked to rank their word knowledge using the author-designed Vocabulary Knowledge Scale below.

This summary VKS sample test is based on ICU's "Combined Core Recommended EAP Vocabulary List, giving just a sample of its first ten headwords or word families. First 100 words were analyzed in terms of both "Passive Recognition/Understanding Vocabulary," and "Active Recall/Use Vocabulary." Student's passive and active L1 and L2 definition and sentence responses were checked to compare the reliability of these students' subjective self-rating. Since our test results have so far established this scale as quite reliable, it could be used to help better determine and teach Japanese students English vocabulary more appropriately. Also tested were each of these student's individual reading levels in terms of estimated reading grade level, relative to native reader norms in America as assessed by standardized reading tests (Gates McGinite, Form C).

Next, using the EAP Vocabulary Knowledge Scale devised by the author, each Japanese EFL student's self-reported Receptive Understanding Vocabulary was measured and compared with objective measures of their Active Productive Use Vocabulary by using a modified "Think-Aloud/Written Protocol" feedback. The VKS helps students answer first on paper what degree of knowledge they think they have of the first 100 word families. Then they are actively reassessed, by writing or telling what they think L1 and L2 definitions are, along with any L2 sentences they think they can make. Degree of accuracy is checked and recorded. Measuring both receptive as well as productive vocabularies can be assessed using

the same form, either during the same class period or else one week later. Teachers may also circle T1 or T2, recording dates and use the same form to do a preand posttest evaluation of the degree and types of vocabulary learning taking place in either receptive or productive areas over any given period of time. As such, this VKS can measure dynamic development of vocabulary knowledge, being simple and practical to administer.

### Contextualizing Kanji Learning: Finding Clues for Oriental English Learners

Since it is a basic educational principle to proceed from and build upon prior, familiar knowledge, one must ask: "How is Kanji being learned in Japan?" "Can any of these steps be useful hints to more effective vocabulary learning for Japanese learners of English?"

There clearly is a basic level of "Threshold Vocabulary" which is necessary to read common text in any language. In Japanese, it is necessary to know about 2,000 basic characters. As Sugawara (1989) writes, "the study of Japanese can be likened to the solo ascent of a lofty peak." Ruxton (1994) confirms this, saying that "Clearly a major part of the ascent is the ability at least to reproduce (i.e. copy) and recognize, if not write from memory, up to 2,000 characters." The first 1,006 characters learned in Japanese elementary schools are known as the Kyouiku Kanji, or basic educational Kanji characters. He also makes a distinction between capitalized "Kanji," representing the global concept of Chinese characters as used in either Chinese, Korean or Japanese language systems on the one hand, and "kanji," representing individual Chinese characters, which have also been borrowed into Korean and Japanese languages. Since efficiency or automaticity of word recognition has been shown to be the most important lower level reading process, after basic reading phonetic skills have been acquired (Kuhara-Kojima, et al, 1996; Bell & Perfetti, 1994; Curtis, 1980), one's efficiency or automaticity in processing kanji characters would also be the most important prior skill needed for fluent reading comprehension in Japanese or Chinese text. As Kuhara-Kojima, et al. (1996, p. 158) have summarized the research in this



area:

A number of investigators (e.g. Daneman, Carpenter, & Just, 1982; LaBerge & Samuels, 1974; Perfetti, 1985) have asserted that individual differences in reading comprehension ability may at least in part be attributed to the

extent of master of such lower level skills as recognizing letters and words. More specifically, they have indicated that skilled readers can direct their limited processing capacity more to the higher order processes of comprehension (constructing elementary meaning units and a mental

Table III: Applying Essential Vocabulary Learning Steps, Skills and Strategies

STEP 1:	STEP 2:	STEP 3:	STEP 4:	STEP 5:
FORM-FOCUS SOUND-CENTERED	SHORT-TERM MEMORY FOCUS	MEANING-FOCUSED	LONG-TERM MEMORY FOCUS	USE-FOCUSED
ROOTWORD- CENTERED	KEYWORD-CENTERED	Rapid Accessing of Definitions via	Fix Form & Meaning in Memory	New Word/Phrase Activation via:
		a. CBDs-Online or Software off	Category-Centered	Productive Use
Word Analysis of Base, A/Suffixes	Categorized by Related Classes	Computerized Bilingual Dictionary	Record Definitions; Uses Means to Archive	Oral/Written Expressive Skills
		Quickionaries; Portable CBDs	SF Keyword Approach *	Used in Context(s)
Spelling Systems; Pronunciation System or Character-Sound Associations	Stress on Rapid Building of Large Passive Recognition Vocabulary via Semantic Fields Approach	b. Book Dictionary 1) Bilingual vs. 2) Monolingual 3) Bilingualized	Via Semantic Field Networks of Association; Use of Word Maps, Concept Trees, Graphic Organizers	Create own Sentences Use in Whole: a) Oral Speech Utterances or b) Written Expressions
Related Words or Cognates	Use of Mnemonic Keyword Method	1) Bilingual vs 2) Monolingual	Specific Lexical Patterns/ Phrases	Generative or Productive Use (Skits/Plays; Songs / Poems)
Part(s) of Speech		Brief Synonyms vs	Common Idioms/	Monologue Speech
Grammar Forms	EAP/ESP Vocab. (ICU Study, '92)	Homo/Antonym Word Comparisons	Collocations	Dialogue; I.V. Conversations
Vocab. Texts with this Approach:	Crow's ('96) PHR Keyword Approach Semantic Field Keyword Approach (Receptive Vocabulary)	Bergen Evans Wordcraft Series	Idiom Texts McCarthy's Lexical Approach	Author's Creative Vocabulary Story Approach & 8-Fold Learning Taxonomy Steps Applied.
Rapid Expansion of Understanding Level Vocabulary:	Quigley, Mackey's * Semantic Field Keyword Approach	Presentation in Various Contexts 4 Repeated Exposure	Gitsaki ('97, '99); Schmitt & Carter, (TLT, 24/8, 2000)	Laufer & Nation Hatch's 5 Steps
Etymological Word Origins Approach: (Eichosha, 94)	Expanding Your Vocabulary by Word Roots, by Jim McKim		State Rating Tasks/ Word Knowledge Scales:	ACTIVE USE/ RECALL VOCAB
Loucky's L2 Taxonomy of Vocabulary Learning Steps, Skills and	(Using SFK * Spider-Web-based Networking Approach) 8 Processing Steps:		Zimmerman ('97); Wesche & Paribakht ('93); Waring (2000).	Basic Vocabulary or Wordcraft used with Vocab Stories
Strategies:	2) Accessing	4) Analyzing	6) Activating	8) Reassessing
1)Assessing	3) Archiving	5) Associating	7) Anchoring	Reviewing and Recycling



model of the test) because their lower level processes have become more efficient and automated than those of less skilled readers.

In seeking to map out some of the approaches used in learning Japanese Kanji, many of which are mentioned by Ruxton (1994), the author sought to classify them using his own so-called "Taxonomy of Vocabulary Learning Strategies." These established principles of effective vocabulary learning should be taught and practiced as regularly as possible to help language learners develop their semantic knowledge and fluency as much as possible. It has the following five steps and eight learning strategies:

## Developing a Taxonomy of Vocabulary Learning Strategies: Parameters for Assessing and Improving the Effectiveness of Vocabulary Instruction

Recommendations for improving vocabulary learning in Kanji-based countries can be deduced by examining those described by Ruxton (1994) and others, and seeking to dovetail these into a "Taxonomy of Vocabulary Learning Strategies," such as that given above. Kanji textbooks deal with three main elements, and as the stool analogy above clearly illustrated, each of these has an importance in building memory retention of new Kanji vocabulary. Using a simple chart can help one to clarify, categorize and learn new vocabulary, as well as to better assess vocabulary instructional materials and approaches. As Ruxton (1994, p. 3) stated, "When a new kanji is introduced, the learner must be given three elements simultaneously: how to write it . . .; its core meaning . . .; and its possible readings . . . . " These fit into Steps 1& 3 below.

Naturally, how to write a kanji concerns its written form, or Step 1. Learning its core meaning(s) involves Step 3, which is a meaning-focused process of accessing a given target word's definition(s). Learning its possible readings or pronunciations would be represented by Step 1's focus on both written form and spoken pronunciation. Use of Quickionary Reading Pens is highly recommended and has proved to be one of the most rapid, effective and enjoyed accessing instruments tested by this researchers at three Japanese colleges (see Authorb, "Assessing Computerized Bilingual Dictionaries," 2001). These tools provide computerized translation of target words into L1 meanings, along with pronunciation of target language vocabulary in L2 simultaneously within one second of scanning by OCR. In linguistic terms Step #1 would focus on the word's grapho-phonemic or sound- symbol relationships. Naturally encouraging the use of Computerized Bilingual Dictionaries (CBDs) at Step #3 can greatly help language learners by enabling them to develop rapid meaning accessing skills, so essential to building a better vocabulary. CBDs are clearly the fastest way to check on how a particular kanji should be written, as well as how an English word should be defined or pronounced. Usually only more expensive models, such as Quickionaries, are equipped with pronunciation software however.

The process of "Activation" of new target vocabulary through creative, expressive use (Step #5) seems to be a missing link in much rote kanji character learning. However, there are other methods and steps of English reading and vocabulary instruction that could be better clarified and strengthened by carefully examining approaches of various Kanji textbooks. Although Japan's schools tend to focus heavily on

STEP 1:	STEP 2:	STEP 3:	STEP 4:	STEP 5:
FORM-FOCUSED SOUND- CENTERED.	SHORT-TERM MEMORY FOCUS	MEANING- FOCUSED	LONG-TERM MEMORY FOCUS	USE-FOCUSED
ROOTWORD- CENTERED	Mnemonic/Radical KEYWORD- CENTERED	Rapid Accessing of Definitions	Fix Form & Meaning in Memory	New Word/Phrase Activation via:
# Strokes; Pronunciations	Primitive Element Kanji Parts (Heisig)	Via CBDs-	Category-Centered	Productive Use
Word Analysis of Base, A/Suffixes	Categorized by Related Classes	Computerized Bilingual Dictionaries	Record Definitions with Means to Archive/Store	Oral/Written Expressive Skills



Step 1, getting the Education Kanji drummed into students' memories by boring, repetitive drill, as well as *Juku Shodo* or calligraphy classes after school, there is clearly an overemphasis on form rather than on building a broader and richer conceptual vocabulary as a result. Repetitive writing drills, as Ruxton (1994, p. 2) characterize them, depend "mainly on the motor memory (i.e. the ability to remember a set sequence of movements of the hand while writing)" a particular kanji's proper stroke order. Japanese Kanjilearning approaches that he describes may be further categorized and better understood by comparing it with the eight classifications developed by this author's new "Cyclical Taxonomy of Vocabulary Learning."

## Proposed Taxonomy of Foreign Language Vocabulary Learning Strategies

Kojic-Sabo and Lightbown (1999) isolated and compared "Students' approaches to vocabulary learning and their relationship to success" in both ESL and EFL settings. Based on such studies, as well as others done by the author at seven colleges in Japan (see Author, 1996-present), some of the most essential

vocabulary learning steps, skills and strategies have been isolated, analyzed and advanced for further careful study. This tentative cyclical "Taxonomy of Foreign Language Vocabulary Learning Strategies" is proposed and explained below. Thinking through Kanji vocabulary learning methods presented in Ruxton's (1994) survey of Kanji learning materials, they might be categorized according to types of vocabulary processing strategies or instructional methods employed. From a theoretical and instructional point of view, Table IV summarizes the major foci of each of these respective categories.

Whereas English and many non-Kanji languages are based on understanding their alphabetic or syllabic spelling and pronunciation systems, the charactersound correspondences are much more complex in Kanji-based language systems. Japanese, for example, has three character alphabets, two being the syllabaries of Hiragana and katakana, and the third being Kanji. Language families have related cognate words built upon similar root word bases, and many languages have different forms denoting different parts of speech. Some have gender-specific forms, and many have various inflections for nouns and different

Table IV: Categorizing Approaches and Steps in Kanji Vocabulary Learning

STEP 1: Writing Word's Form	STEP 2: Reading Word's Sounds	STEP 3: Accessing Word's Definition	STEP 4: Memory Retention Devices	STEP 5: Expand by Compounding & Using in Context
FORM-FOCUSED	SOUND- CENTERED FOCUS/ Pronunciation	MEANING- FOCUSED	LONG-TERM MEMORY FOCUS	USE-FOCUSED (Similar to Semantic Fields: SFKA)
Ideo/Pictograph	Echoic Memory	Recommend: Use	Visual or Auditory	Daily Yomiuri's
Visual Focus	Chinese Kunyomi /	Rapid-Access CBD	Mnemonic Devices/ DeRoo	Kanji Class Lesson
Image/Icon	Japanese Onyomi	79 Radical Groups	Keyword Methods:	
# Strokes; Pronunciations:	Primitive Element Kanji	Hadamitsky & Spahn's Character Dictionary (1989)	1) Heisig (1990) Remembering the Kanji, Books 1&2	Like SFKA, but Radical- not Keyword-Centered
Kumon Method	Parts (Heisig)			
Hadamitzky & Spahn (1991) Self-Study Workbooks	Nihongo (1989) Gitaigo Jiten: Illustrated Dictionary of Japanese Onomatopoetic Expressions	Nelson's (1974) 214 Radical Groups based on Chamberlain's (1905)	2) Henshall (1988) [1,945] (Mnemonic) Guide to Remembering Japanese Characters	Crowley's (1990) Kanji Road to Japanese Power Contextual Use Natural Vocab. Expansion
Bonjinsha 's Basic Kanji (1989)	Mnemonic Keyword or Basic Kanji Primitive Elements; Basic Radicals	Halpern's (1990) New Japanese-English Character Dictionary's SKIP method	3) Rowley, (1992).  Kanji Picto-graphix (mnemonics: text-visual); 4) De Roo's 2001 Kanji/Keyword	Loucky (2001) Taxonomy of Vocabulary Learning Strategies



conjugations for showing verb tense or mood. Kanji, on the other hand, has tones in Chinese, but a variety of pronunciations in Japanese. Usually there are two basic readings, either original Chinese or native Japanese readings. Thus Japanese learners are more used to thinking in terms of Kanji characters by going from sound-symbol associations to their related meanings, rather than in terms of basic root words to which prefixes or suffixes are affixed to change either meaning or grammatical form. Therefore they need more explicit instruction in word analysis skills and word origins and word formation skills.

Language learners anywhere need strategy training in these essential vocabulary Learning steps, skills and strategies. They cannot be taken for granted, and often are not known or practiced. Beginning with 1) Assessing a learner's lexical ability by using Vocabulary Knowledge Scales, Headword tests, or standardized reading tests, teachers must correctly diagnose each learner's individual language skills in order to be able to prescribe and teach most appropriately. Ruxton (1994) listed only one text that offers help with this stage of kanji vocabulary learning. Bonjinsha's Kanji Books test up to twelve different areas of Kanji knowledge. Such tests can help to guide one's study, and also to identify both strengths and weaknesses, useful especially to those studying independently.

Students need to be taught how to use various types of dictionaries for better 2) Accessing of new word meanings. First bilingual/ized dictionaries should be used, until learners reach the minimal "Vocabulary Threshold" needed for independent reading and language learning using monolingual dictionaries. CBDs offer the most rapid access, as well as both L1 and L2 definitions, and may have other functions such as 3) Archiving, or listing words looked up as well as pronouncing them. Just as those learning Kanji-based vocabulary use Step 4, Analyzing of character radicals and primitive elements to arrive at their combined meaning, so English learners need to develop better word analysis and word formation skills. As Mori and Nagy (1999) discussed in their article on the "Integration of information from context and word elements in interpreting novel kanji compounds," kanji characters give an advantage to learners because "component characters usually provide some information for the meaning of a low-frequency difficult word" (p. 80).

Another important Step is #5, Associating, or Vocabulary Expansion by systematic organizing around related key concepts, words or common kanji radicals. Just as McKim's (1994) book helps English learners to expand their vocabulary by learning the meaning of original Greek and Latin "Root Words," so regularly using the Daily Yomiuri's Kanji Class Lessons would help students to realize the great importance of learning and using new target kanji compounds in groups and in context. Japanese English students are often not taught any system of recording or organizing their vocabulary learning. Thus many of the essential Vocabulary Learning Steps are being overlooked.

Often Japanese students do not access unknown L2 words, despite frequently not having sufficient vocabulary for guessing their meanings correctly from surrounding contexts. Too often they are told to simply guess the meanings, not having sufficient lexical resources for doing so. Large numbers of students do not bring or use dictionaries much at all, but those using CBDs can usually be observed to be making more rapid progress, because they are accessing new words much more frequently and independently as mature language learners should. Also many do not learn any systematic ways to follow Step 3, 'Archiving" of new vocabulary to assist with Step 7, "Anchoring" or retention as well as in future Step 8 activities of Reassessing, Reviewing and Recycling. Of course new words must also be Activated, Step #6, as soon and as frequently as possible for them to pass from merely receptive into productive, long-term retention. Active vocabulary can only be produced by expressive use. Crowley (1990) points out that there is a strong connection between fluency in conversational Japanese and one's Kanji language power.

Various memory retention approaches have been used to help strengthen learners long-term memory of kanji characters. Among these "Mnemonic Keyword Approach" devices are various texts, such as Heisig's (1990) Remembering Kanji, Books 1 and 2; and Hewgill's (1997) Kanji Gold software, giving learners the excellent option of recording words missed into their own file for further review. This uses Step #3,



Archiving, in the "Taxonomy of Learning Strategies." Similarly, Henshall's (1988) Guide to Remembering [1,945] Japanese Characters uses memorable mnemonic phrases for learning almost 2,000 most common kanji used in Japanese. He also includes a very useful list of the 100 most commonly occurring kanji character elements, which use from 2-10 strokes, and gives their principal meanings. He also gives such useful charts as one which gives the original source characters from which Hiragana and Katakana syllabaries were derived, and another which indexes Non General Use (NGOs) and Chinese Only (COs) characters, categorizing them helpfully by number of strokes from 1-26 strokes. Finally, it should be known that Japanese themselves look up unknown kanji characters either by using "Stroke Count Index" or else a "Readings Index," both of which Henshall adds at the end of his very user-friendly guide.

Although Kanji systems offer perhaps an overabundance of visual symbols and hints as to their meanings, their possible readings or pronunciation renderings differ depending upon how they are compounded. This is similar to how English words may differ in meaning according to the context. It seems clear that when learning new target vocabulary a student of Oriental languages will have to modify his or her approach so as to maximize the potential benefits of using a Kanji system's natural inherent strengths and linguistic hints. Likewise, when an Easterner meets a Western language he or she needs to focus on using all of these essential steps needed to recognize and remember its Greco-Roman roots, so as to more quickly expand and more firmly anchor new vocabulary learning. In particular, a "Mnemonic Keyword Approach" may be more helpful in learning a Kanji-based language due to its pictographic ideas.

Although quite a few kanji can be remembered by the pictorial image they create, many are composed of a combination of radicals that become too complex to easily remember in this way. Some of the simpler ones can be, however, and are illustrated by such approaches as that of Rowley (1992) in his *Kanji Picto-graphix*.

When learning English, however, mnemonic devices can only be effectively used for concrete actions or nouns if one can readily associate a visual symbol or sound with a concept standing for a target word. A much more universally applicable approach which appears to hold much potential for helping language learners to more rapidly expand their target vocabulary is the Semantic Field Keyword Approach, which builds learning both on common conceptual schemata and also around more simple and central Keywords. In pilot tests done at the author's school this method proved to be even more effective when used together with rapid access CBDs, or Computerized Bilingual Dictionaries.

Both Halpern's (1990) New Japanese-English Character Dictionary's SKIP method, and also Daily Yomiuri's "Kanji Classes" use methods of vocabulary expansion that may be likened somewhat to the Semantic Field Keyword Approach developed by Crow (1985) and tested by Quigley (1985). Halpern's approach includes both core meanings and compounds, but also helps learners look for, observe and learn patterns of form, meaning and relationships to help them expand their vocabulary. His SKIP method, a "System or Kanji Indexing by Patterns," helps learners to focus on and retain these core meanings and new related compounds since it is based on only four common geometrical patterns.

The Daily Yomiuri's Kanji Class section also builds learner's vocabulary by helping them learn to formulate related compounds by combining a basic "Keyword" Radical with other characters. This follows Step 4 in the author's Taxonomy of Vocabulary Learning Strategies, the step known as "Associating," or organizing around meaningful conceptual or schematic patterns to cognitively aid one's memory and language development.

The author (pp. 308-311, 1996) has pilot tested the Semantic Field Keyword Approach with Japanese students, with better results shown when computerized materials were used rather than just learning from text or on paper. Using approaches which stressed Step 5, "Associating," Crow and Quigley (1985 & 1986) developed an effective method for helping foreign students preparing for college courses in America to rapidly expand their receptive target language vocabulary through their Semantic Field Keyword Approach, applied in reading various history, science and social science materials.



### Recommendations for Instructional Applications and Fruitful Research Areas:

Among the best recent recommendations available for JSL students who may be wondering "Which Japanese-English Character Dictionary Can Best Meet Your Kanji-Learning Needs?" Noguchi (2001) gives the most succinct summary, also charting the features of the four best-known J-E character dictionaries in the field. These four most comprehensive self-study tools available for learning new Japanese kanji and vocabulary are as follows: 1) Nelson's Modern Reader's Japanese-English Character Dictionary (1962), 2) Halpern's New Japanese- English Character Dictionary (1990), 3) Spahn & Hadamitzky's Kanji Dictionary (1996), and 4) Haig's New Nelson Japanese-English Character Dictionary (1997). Noguchi clearly compares such detailed features as their respective indexing systems, treatment of compound words, number of entries and compounds listed, etc. She also notes that only Halpern's is yet available in electronic book form, also providing a memory system using common shape patterns (the SKIP method noted above), stroke order and handwritten characters, as well as noting frequency of use, standard Chinese forms and readings, and any homophones or synonyms. Halpern's also further helps to activate new vocabulary by giving more examples of character use, as well as a memorable Keyword for each character entry. This is quite similar to the Semantic Field Keyword Approach recommended by this overview study for English study by learners from Kanji-block countires. As Noguchi notes (2001, p. 18), "The keyword can be useful as a learning tool because it conveys the essence of the character in one concise thought and is easy to memorize." Both JSL kanji learners and ESL/EFL learners today can supplement their use of bilingual book dictionaries (BBDs) with a wide variety of different types of computerized bilingual dictionaries (CBDs), including portable electronic ones (PEDs), various translation software programs, and translation websites as well. Language learners should be encouraged to select from among this widening array of various modern resources the best reference tools to meet their own individual learning needs and styles.

Some other areas needing more specific strategy instruction among Japanese EFL students are these. As generally low proficiency readers they need to learn how to:

- 1) Improve Accessing Speed for:
  - a) Meaning
  - b) Pronunciation

(Both of these functions are available with Quickionary assistive reading pens and a few of the more expensive electronic dictionaries.)

- 2) Widen Degree or Depth of Receptive Semantic Processing of:
  - a) Word's Form—including thoroughness of word analysis
  - b) Word's Meaning—breadth of meanings learning
- Broaden Richness of Exposure—in a wider variety of contexts
- Increase Amount of Productive Processing Used— Is "Expressive Activation" required/attempted, via:
  - a) Speaking
  - b) Writing
- Improve Degree of Immediate Feedback or Correction Available via:
  - a) CBD Feedback or Correction
  - b) Native or Teacher Feedback
  - c) CAI/CAELL or Internet-Mediated and Enhanced Programs with more immediate feedback and Multimedia Stimulation and Reinforcement of new FL/SL vocabulary.
- Increase Degree of Language Immersion or Exposure Opportunities
  - a) ESL Setting? or
  - b) EFL Setting?
  - c) English Media used or available?
- 7) Improve Completeness of Linguistic Processing:
  - a) Semantically—at word or definition level
  - Syntactically—at whole sentence or more complex paragraph discourse level
  - c) Have new term's collocations, idiomatic uses, or patterns of contextual use been noted or illustrated, within various social situations or in typical patterns of textual organization?)
- 8) Focus on Intensity and Intentionality of Vocabulary Instruction—is there a clear, systematic plan of action?
- 9) Improve Clarity of Language Learner's L2 Vocab-



- ulary Learning Goals, Steps and Strategies—e.g. regular practice via retelling, creative vocabulary stories, etc. Sharing of Vocabulary Journals, etc.
- 10) Assess Degree of Structure or System of Regularity in Use of Effective FL/SL Vocabulary Learning Strategies--How Systematic or Structured is the language learner in:
  - a) Accessing Habits—e.g. Are they a regular, rapid user of a CBD upon every encounter with a new or unknown L2 term?
  - b) Archiving/Recording Habits—How do they record and organize new learning?
  - c) Articulating Word's Form, Meaning and Pronunciation—Are these clarified for learner? How and to what degree?
  - d) Activation Patterns—Are there opportunities and habits of regular, expressive use?
  - e) Evaluation Patterns—Are learners or teachers assessing new vocabulary learning through regular feedback and review?

Students should also be taught how to use and apply these "Principles of Good Vocabulary Learning and Review:"

- 1) Learn and review new vocabulary <u>as quickly as</u> possible (ASAP).
- 2) Learn and review new vocabulary <u>as frequently or</u> often as possible (AMAP).
- Learn and review new vocabulary <u>as thoroughly as</u> <u>possible</u> (broaden lexical connections for richer, deeper vocabulary.
- 4) Learn and review new vocabulary as productively as possible, i.e. USE new words SOON actively and expressively!
- as possible, both with other language learners and also by using multisensory input and output, all four communication skills if possible, and a maximum of available multimedia support to help you: a) Recognize, b) Remember, c) Retain, d) Relate the word or phrase to others both linguistically and socially. Finally teachers should help maximize L2 reading and listening as they seek to:
  - I . Expose learner to more English immersion and opportunities for both L2 input and output.
  - II. Encounter as much new TL vocabulary as

- possible, seek to increase TL stimuli via maximum textual, multisensory multimedia, computerized, and human interactions. Focus on high frequency terms first. Promote CAI-and Internet-mediated instruction and virtual learning environments to help increase learners' L2 reading and listening input exposure.
- III. Enlighten learners as to new term's Rootword, origins, and basic meaning(s).
- IV. Enhance understanding of other possible word forms, parts of speech and phrasal uses.
- V. Enlarge upon a word's possible meanings and collocational uses.
- VI. Expand one's TL vocabulary by learning as many synonyms as possible, using SFKA.
- VII. Enrich one's TL vocabulary by learning homonyms, antonyms, nuances of synonyms.

Different types of language learning tasks seem to result in different treatment of unfamiliar vocabulary. Some language tasks require deeper levels of processing, which is why it is necessary to clarify and develop a better model of vocabulary learning. This researcher has found evidence for vocabulary learning processes being somewhat cyclical and involving multi-tasking and overlaying interconnected processing strategies. Further research into the exact nature of these L1 versus SL/FL vocabulary processes is needed, but will surely involve studies in each of these areas: 1) Assessing, 2) Accessing, 3) Archiving, 4) Analyzing, 5) Associating, 6) Activating, 7) Anchoring, and 8) Reassessing, Reviewing and Recycling newly acquired TL vocabulary. Mastery of these eight steps taken together could be defined as essential cognitive language processing strategies necessary for developing the skill known as "Automaticity." This skill in turn becomes the basis for measuring or predicting a reader's "Anticipatory Set," which is in turn a combination of both lower level word knowledge and meaning recognition skills, prior background knowledge (both cultural, content schemata and world knowledge), and degree of syntactical processing and inferential skills. Until each of these interactive areas can be analyzed and assessed in more detail, it is at least hoped that this study can help to clarify what a more interactive, crosspollenating model of foreign language vocabulary



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acquisition could look like in Kanji-based countries, and those lexical and content processing skills and strategies in need of further step by step research.

### Conclusions:

This work has compared some of the most essential steps, skills and strategies needed in Kanji and English vocabulary learning, which are probably common to all lexical development. We also examined the relevance of using both "Mnemonic and Semantic Field Keyword Methods" for Asian EFL students, asking the questions, "Can Western methods meet Eastern needs?" "What can teachers of Western languages learn from Eastern Kanji language learning systems?"

In attempting to answer these questions, a Vocabulary Knowledge Scale was developed for easy assessment, as well as a "Cyclical Taxonomy of Vocabulary Learning Strategies." This was applied to both Kanji learning and English learning settings, looking for common bridges and strategies that could be helpful for both language learning and instruction in either EFL or JFL contexts. Many examples have been given from both Kanji and English learning situations. Any other language may be substituted for testing of the dynamic VKS described herein. It appears that the "Cyclical Taxonomy of Vocabulary Learning Steps, Skills and Strategies" described above can also be applied to other language learning settings. Comparative studies and more detailed analyses of each stage among these cognitive and communicative processes are welcomed and encouraged. These eight vocabulary-processing steps involve various learning strategies, and it now appears that computerized tools could enhance many or all of these areas.

The Semantic Field Keyword Approach appears to be a sort of "Spiderweb-based approach," one which builds around schematic networks, and develops L2 vocabulary around Keyword concepts in a natural and logical way. This approach should be studied and applied to its full potential, not only for receptive vocabulary but also for productive vocabulary development. Future studies should also seek to investigate use of the following four useful vocabulary learning strategies, all having some similarities to

methods used in learning various kanji characters. These most highly recommended vocabulary learning strategies, summarized from the author's research (See Author, 1994-2001) and testing of reading skills in Japan over the past decade would include:

- Use rapid-access Computerized Bilingualized Dictionaries to provide fully bilingualized definitions, or both L1 and L2 meanings, since native language definitions are most well-understood and appropriate to the language learner, but L2 definitions can help develop TL processing and production skills.
- Use an Etymological Word Analysis approach, to help students learn and build L2 word-formation knowledge needed to further expand their vocabulary learning skills.
- 3) Use a visual or auditory image to enhance retention of more concrete words. Hulstijn (1997) reviewed many studies of this so-called "Mnemonic Keyword Approach," which differs considerably from the next type of Keywords.
- 4) Finally, use a Semantic Field Keyword Approach to better organize and accelerate receptive vocabulary development using natural conceptual schematic frameworks, which center around simpler Keywords. In Mackey's (1965, p. 2) words, these Semantic Fields are made up of "basic keywords, which [in turn serve to call up, summon or] command an army of others." Central Keywords serve like military officers to summon or call up an array of other related words to our minds, thus they help to provide organizing categories for our mental lexicons.

## Recommendations: Need for Specific Culturally Sensitive, LanguageAppropriate Strategy Training in Foreign Language Vocabulary Learning and Processing

Clearly more specific strategy training is needed in vocabulary learning and processing, especially for learners of non-related languages. The main reason for this assertion is the fact that a large majority of Japanese EFL learners, even at a college level, are still below the minimum threshold level (MTL) needed to



be able to read independently, or learn new terms incidentally through extensive reading (ER). Waring (2001) recently did a fairly scathing review of 28 pieces of research literature, which are cited as "evidence" for the effectiveness of ER for language development. His conclusion after studying numerous, serious flaws and problems with much ER research is as follows. Waring notes that (p. 18):

Of the 25 studies that investigated 'gains from exposure,' 'gains from writing,' or compared ER with other treatments, a full 100% were contaminated either by the presence of outside tuition [other classes] or exposure, or the controls were not exposed to the tested vocabulary or the ER group had longer exposure to English. Some of these studies suffered from all these forms of contamination. This lack of experimental control, mostly as a result of the use of convenience populations [whole intact classes], means that while circumstantial evidence supporting ER abounds, the presence of contamination factors undermines the research as it cannot provide unequivocal evidence of the effectiveness of ER.

From such a review it is clear that a much more systematic, intentional and intensive approach to teaching and researching both Intensive and Extensive Reading (IR & ER) is required. This naturally includes any related language development, including changes or growth in the area of vocabulary acquisition. A Semantic Field Keyword Approach, used along with rapid access Computerized Bilingual Dictionaries of all kinds may well be just the type of approach that is required for foreign language learners to succeed in more rapid FL vocabulary acquisition. (See Authorb, 2001, for proven studies and suggestions of how these and other CAELL innovations can be used to help maximize FL vocabulary development.) Likewise, more careful types of computeradaptive testing (CAT) of various vocabulary and comprehension strategies and software seem to be needed in order to get a clearer picture of each of these steps--of their interaction and development--and also of their similarities and differences in each L1-L2 paired language learning setting, as well as when comparing first, second, and foreign language reading development.

## Proposed Interactive Model of FL Reading and Vocabulary Development

What would a necessary and sufficient model of Second Language Acquisition in general, and of SL/FL Reading and Vocabulary Development in particular, look like? It would have to be able to assess, monitor and account for both L1 and L2 lexical and syntactical processing development, since many of these skills and strategies are transferable across language fields. To be sufficient, any such model also would need to have great explanatory power, yet be simple enough to be understandable, while comprehensive enough to cover both receptive and productive areas of language development in all four communication skill areas.

Finally, such a model, to be scientifically acceptable and practically helpful, would need to meet the rigorous demands of being able to generate further helpful hypotheses about language and vocabulary development that are both testable, repeatable and observable. A model that could also be tested by computerized, mechanical means would be even more helpful and advantageous to the language teaching and testing community. Such a model, like Sir Isaac Newton's Principles of Motion gravitational theory, would have broad explanatory powers and potential applications in many other areas of language education. The lexically-based model of language development posited above in the eight step cyclical Taxonomy of Vocabulary Learning Strategies, or at least one that closely approximates and subsumes it, seems to satisfactorily account for many of the processes involved in second and foreign language vocabulary acquisition, at least in those areas where it has been tested so far.

Practicing these skills together in proper combination seems to be what is required to develop both native and nonnative reader's lexical "Automaticity and Anticipatory Set." Naturally, other higher level reading and reasoning skills, including inferential predictive skills, and so on, include syntactically and rhetorically-based comprehension skills, whose strategies should be taught after learners have succeeded in "crossing the vocabulary threshold" (Laufer, 1997), just as one would have to do before attempting to read



any Oriental literature. Without first mastering the most basic and essential kanji vocabulary, most texts would just "look like Chinese chickenscratch" to Occidental learners.

Even the vast and complex system of Chinese Kanji has been greatly simplified, and so must the teaching of English language and vocabulary. Although English uses only 26 letters, even simplified Chinese Pinyin uses only 22 different radicals, and 214 key elements or so-called 'primitives' are used to write traditional Chinese characters. Nelson, Broadberry & Wang (2001) point out that "2,000 years ago, Chinese "alphabet" consisted of 540 radicals!" Just as Kanji vocabulary is developed based around words having similar radicals or meaningful ideographs in them, a more effective means of fostering vocabulary development among such learners seems to have been found in this pilot study. Resurrecting Crow and Quigley's (1985) Semantic Field Keyword Approach (SFKA) and using it in combination with more short-term Mnemonic Keyword devices may well be the most culturally relevant means for expanding lexical development of learners from Kanji-based countries, since they also learn groups of related kanji based on common compounds. Many other recommendations have been offered by the author in other studies of vocabulary training methods and materials (See Author, 1994-2001 articles).

Indeed we need to try to understand with greater empathy that many lower level learners from Kanji-based backgrounds, as well as students used to using other non-Roman scripts, often feel the same kind of linguistic shock, and lexical or cognitive overload and confusion when viewing English text from the other side of the door, especially from the Eastern side of the mountain. Several books studying the origins of ancient kanji characters may help to bridge the gaps

between East and West, and between a modern, naturalistic worldview and the more spiritual philosophy of life prevalent among the ancient Chinese people.

These helpful cross-cultural linguistic comparisons include: 1) Kang and Nelson's (1979) Discovery of Genesis; 2) Nelson, Broadberry, & Chock's (1997) God's Promise to the Chinese; 3) Nelson, Broadberry, & Wang's (1998) Beginning of Chinese Characters; 4) Wang & Nelson's (2001) God and the Ancient Chinese; and 5) Legge's English translations of The Chinese Classics (1983 Reprint, Taipei: SMC Publishing), which include such ancient Chinese classics as The Confucian Analects, Works of Mencius, Doctrine of the Mean, etc. Several works that can greatly help non-Kanji background learners to better appreciate the origins of Kanji systems are 1) Biblical Encounter with Japanese Culture, by Corwin (1962); 2) God's Promise to the Chinese, by Nelson, Broadberry, and Chock, (1997); 3) The Discovery of Genesis, by Kang and Nelson (1979); 4) Genesis and the Mystery Confucius Couldn't Solve, by Nelson and Broadberry (1994); and 5) Kanji ni Himerareta Seisho no Monogatari, by Tim Boyle (1996), a Japanese version showing that the original Kanji system and characters seem to have many things in common with Biblical themes, history and language.

It is very important to make manageable look-up and indexing systems available to language learners that are both user-friendly and easy to understand, preferably along with electronic database and archiving functions. Just as computers have greatly helped to systematize and clarify real language use in modern lexicons, so they can and should also be used to help language learners to better organize and speed up their TL vocabulary development.

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### APPENDIX A: Vocabulary Learning Checklist: Applying Taxonomy of Vocabulary Learning Steps, Skills and Strategies (Co. Author, 2000)

1) Assessing (Pre-Test)	2) Accessing-	3) Archiving	4) Analyzing
Assessing Vocab. Level by VKScales; Head-words or Standard Test	MEANING-FOCUSED Accessing Definitions: L1/L2; L1 & L2 (Rapid Access & Recall)	Record Definitions with Means to Recall/Study (Rapid Recording Best)	ROOTWORD-CENTERED Word Analysis of Base, Affixes/Suffixes
Use EAP VKS Sample	"Bilingual is Best"	Quickionary OCR/CBD	Word Origins/Grammar
5) Associating—by Semantic Field Keyword Approach= Categorizing by Related Classes by Keywords	6) Activating—USE- FOCUSED (New Words/Phrases Activated by Productive, Expressive Use	7) Anchoring in one's memory (ST) until it becomes fixed in Long-Term Memory. Use Mnemonic Devices.	8) Reassessing, Reviewing and RecyclingMeasure Vocabulary Growth/ Change by #1 Post-Test

### APPENDIX B: Vocabulary Learning Blank Checklist of Lexical Processing Skills:

1) Assessing (Pre-Test)	2) Accessing	3) Archiving	4) Analyzing
5) Associating	6) Activating	7) Anchoring	8) Reassessing, Reviewing and Recycling (Post-Test)





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